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INDUSTRIAL CUBA



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INDUSTRIAL CUBA

Tabloid Information Concerning Industrial
Development, Possibilities and
Opportunities in the
Republic of
Cuba

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INDUSTRIAL CUBA

FOR more than three hundred years the industries of Cuba were periodically disrupted by internal and external wars. The nepotism of varying governing powers restricted the development of natural resources, except in just such a degree as would warrant large tribute, regardless of future prosperity.

As a matter of fact, the true industrial development of Cuba began in 1901, when her independence as a nation was assured. In the fifteen years following, Cuba has shown a remarkable increase in industrial growth.

At the beginning of this era, Cuba was in much the same state industrially as was the Southern portion of the United States immediately following the Civil War of the 60's. Her factories were destroyed, her roads were torn and scarred, and the very industries that up to that time assured profit to her workers were paralyzed.

The facts and figures here compiled tell in no uncertain terms the accomplishments of an industrial motive that must have for its incentive a strong natural *foundation*, otherwise no such record could be written.

Naturally, many important industrial facts must be omitted from such a work as this since its object is more to point to present opportunities than to recite past accomplishments.

Further detailed information regarding any of the industries herein named, or omitted, will be supplied by the publishers upon request.

GENERAL SURVEYS OF CUBAN INDUSTRIES

If the commercial and industrial possibilities of Cuba are to be based on her record of the past ten years, it is most natural to conclude that her future is exceptionally bright.

A marvelous soil, a climate unexcelled, a location directly in the pathway of Western and Southern commerce, an ambition to excel in those things which make for good government, and a most liberal encouragement from outside capital, together with friendly international relations, presage for this Republic most exceptional industrial development.

Cuba has in the past ten years increased her imports 82% and her exports 140%.

There has been expended on public works, since 1902, approximately \$100,000,000.00, or about \$9,000,000.00 a year. The Government's fixed policy is one of industrial progress. The Government's plan, in the construction of an extensive system of macadamized highways through the Republic, would serve well as a paragon in many of our States. These highways will serve every part of the Island, and have already put in close touch many of the communities which were formerly isolated. Three principal highways will traverse the Island longitudinally, from East to West, one on the north end, one through the central part, and one between the central part and the Southern coast. Connecting with each of these principal highways, branch roads are being built to all important interior and coastal cities.

1,877 kilometers of paved roads have already been opened to the public. These are distributed in the six provinces, as follows:

Pinar del Rio.....	544
Havana.....	520
Matanzas.....	247
Oriente.....	215
Santa Clara.....	261
Camaguey.....	90

Total, 1,877 kilometers, not including roads built by Provincial and Municipal Governments, which are estimated at about 250 kilometers additional, especially in the Provinces of Havana and Matanzas.

One English mile equals 1,609 meters or $1\frac{609}{1000}$ kilometers (K. M.), or approximately 5 miles equals 8 kilometers (K. M.).

With only fifty-three inhabitants to the square mile, and ample room for the sustenance of three hundred, and but 20 per cent of the available soil adapted to the production of sugar, the possibilities of future growth along other lines than that now producing the greatest revenue are apparently marvelous. These opportunities open to and challenge the capital and enterprise of the world.

While in Cuba sugar is conceded to be the king of industries, it does not monopolize the attention of the Cubans, notwithstanding the fact that at the present time it represents seventy per cent of the Republic's agricultural products, reaching in 1916 approximately \$250,000,000.00 in value.

Some extent of this sugar industry will be

appreciated upon reading the article on sugar in Fact Book No. 2, wherein is detailed a comprehensive statement of this industry. For facts regarding other agricultural products, the same reference is suggested. This book is intended more particularly to deal with those industrial features outside the scope of agriculture.

CUBA'S IMPORTS AND EXPORTS

The following figures of imports and exports, including bullion, showing trade balance in favor of Cuba for the past four years, will illustrate general industrial condition:

Year Ending Dec. 31	Imports	Exports	Trade Balance
1910.....	\$107,959,000	\$151,271,000	\$ 43,312,000
1911.....	113,267,000	123,136,000	9,869,000
1912.....	125,902,000	172,978,000	47,076,000
1913.....	143,827,000	165,125,000	21,298,000
1914.....	119,001,000	177,554,000	58,553,000
1915.....	155,448,000	254,292,000	98,844,000

It will be seen that the imports in 1915 increased \$36,447,000, while the exports have increased \$76,738,000.

The following table details more particularly the sources of imports and exports:

IMPORTS

Countries	1913	1914	1915
United States.....	\$ 75,228,000	\$ 68,623,000	\$ 90,462,000
Other countries in Amer..	10,529,000	7,982,000	8,020,000
Germany.....	9,674,000	5,034,000	800,000
Spain.....	10,033,000	9,939,000	10,817,000
France.....	7,322,000	4,632,000	4,897,000
United Kingdom.....	16,066,000	12,379,000	15,288,000
Other European Countries	7,778,000	6,852,000	6,203,000
All other Countries.....	3,443,000	2,761,000	4,397,000
Total Merchandise....	\$140,073,000	\$118,202,000	\$140,884,000
Bullion.....	3,754,000	799,000	14,564,000
Grand Total.....	\$143,827,000	\$119,001,000	\$155,448,000

EXPORTS

Countries	1913	1914	1915
United States.....	\$131,572,000	\$145,881,000	\$195,289,000
Other Countries in Amer.	5,580,000	3,180,000	3,357,000
Germany.....	4,708,000	2,354,000	.....
Spain.....	657,000	1,645,000	872,000
France.....	1,685,000	2,398,000	1,135,000
United Kingdom.....	18,427,000	15,842,000	33,033,000
Other European Countries	1,204,000	1,087,000	1,865,000
Other Countries.....	780,000	1,720,000	678,000
<hr/>			
Total Merchandise....	\$164,611,000	\$174,107,000	\$236,229,000
Bullion.....	514,000	3,447,000	18,063,000
<hr/>			
Grand Total.....	\$165,125,000	\$177,554,000	\$254,292,000

CUSTOMS RECEIPTS

The Customs Receipts, for the past four years, are shown in the following table, detailed by ports of entry, and this showing, even when placed in comparison with many of the ports of the United States, will prove most interesting:

Ports	1912	1913	1914	1915
Havana.....	\$19,392,000	\$ 20,965,000	\$ 17,607,000	\$ 19,760,000
San. de Cuba..	1,577,000	1,933,000	1,669,000	1,886,000
Matanzas.....	924,000	1,061,000	700,000	845,000
Cardenas.....	506,000	535,000	487,000	662,000
Banes.....	60,000	60,000	63,000	59,000
Caibairen.....	637,000	699,000	549,000	650,000
Baracoa.....	8,000	10,000	11,000	10,000
Nuevitas.....	220,000	230,000	239,000	226,000
Gibara.....	124,000	101,000	123,000	94,000
Los Indios....	4,000	5,000	9,000	10,000
Guantanamo..	261,000	294,000	243,000	348,000
Manzanillo....	500,000	609,000	398,000	421,000
Santa Cruz del Sur.....	18,000	31,000	9,000	23,000
Juraco.....	8,000	7,000	12,000	14,000
Tunas de Zaza.	1,000	8,000	3,000	16,000
Nipe.....	419,000	658,000	520,000	462,000
Trinidad.....	2,000	2,000	2,000	35,000
Cienfuegos....	1,622,000	1,628,000	1,234,000	1,522,000
Puerto Padre..	155,000	247,000	257,000	283,000
Batabano.....	3,000	4,000	2,000	3,000
Nueva Gerona.	14,000	20,000	27,000	24,000
Sagua la Grande	460,000	584,000	543,000	402,000

The chief articles of trade are as shown by the Customs Reports for the year 1915:

IMPORTS

Articles	Amount per Annum
Potatoes.....	\$ 1,949,851.00
Milk (Condensed).....	2,626,422.00
Flour (barrels, 936,198), value....	5,881,323.00
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Total Cereals.....	\$ 19,173,881.00
Lard.....	\$ 5,988,484.00
Hams.....	784,869.00
<hr/>	
Total Meat Products.....	\$11,749,262.00
Wines, Olive Oil, etc.....	\$ 4,408,918.00
Cotton Goods.....	11,185,948.00
Shoes.....	5,178,381.00
Agricultural Implements & Mchy.	18,576,796.00
Chemical Products.....	5,831,185.00
Iron and Steel Manufactured....	6,081,320.00

EXPORTS

Articles	Amount per Annum
Iron and Copper Ore.....\$	4,097,659.00
Hides.....	3,038,429.00
Garden Truck.....	897,606.00
Pineapples.....	1,279,300.00
Bananas.....	887,339.00
Cocoanuts.....	90,459.00
Oranges.....	425,606.00
Other Fruits.....	88,603.00
Fibers.....	53,281.00
Hardwoods.....	834,901.00
Tobacco (leaf and manufactured)	24,413,778.00
Sugar and Molasses.....	196,168,330.00

EXPORTS

With Cuba beginning about fifteen years ago, with practically nothing but location, climate and soil as assets, devoid of credit, and unknown to the commercial world, to all intents and purposes, her accomplishments, as shown by the following table, must be recognized as evidence of commercial stability:

Total foreign commerce over.....	\$409,704,000.00
Exports for year ending December 31, 1915.....	254,292,000.00
Imports for year ending December 31, 1915.....	155,448,000.00
Balance of trade in favor of Cuba.....	98,844,000.00
Balance of trade per capita.....	39.53
Foreign export of Cuba per capita.....	101.72
Foreign imports of Cuba per capita.....	62.19
Foreign debt of Cuba per capita.....	27.50

Although Cuba has a larger per capita debt than the United States, her per capita foreign commerce is about 500 per cent higher than that of the United States.

More merchandise enters and leaves the harbor of Havana than any in the United States except New York.

Cuba's sugar crop this year exceeds \$250,000,000.00. Her tobacco yield is valued at \$24,000,000.00.

Although the groves are young, citrus fruit, pineapples and vegetables produce \$3,500,000.00 annually.

Coffee, cocoa, honey, asphalt, iron, henequen, mahogany, cedar, hides, etc., yield \$10,000,000.00.

Her exports have increased in ten years 140 per cent.

Her imports have increased in ten years 82 per cent.

All but 19 per cent of Cuba's exports go to the United States.

Owing to the European War, which began in the summer of 1914, the beet sugar product of France and Germany was eliminated, causing a marked rise in the price of cane sugar throughout the world. As a result of this, the value of the crop produced in the Island this year reached a total of \$250,000,000.00. The latter sum seems almost startling when it is taken into consideration that only 12 per cent of Cuba's area is cultivated in cane. Less than 3 per cent of available land is in tobacco and not over 5 per cent in other crops.

FOOD STUFFS

Below is a list of the average wholesale and retail prices in Havana, Cuba, of food stuffs:

	Per 100 Lbs.	Per Lb.
Flour.....	\$4.00	\$0.06
Cornmeal (Native).....	3.20	.05
Potatoes.....	3.00	.04
Onions.....	4.00	.05
Spanish Beans (Garbanzos).....	8.00	.10
White beans.....	5.25	.07
Black beans.....	7.00	.08
Red beans.....	9.25	.11
Rice.....	4.00	.06
Coffee (Roasted).....	33.00	.40
Coffee (Green).....	24.00	.28
Sugar (Refined).....	6.72	.07
Sugar (Brown).....	3.20	.05
White bacon.....	20.00	.25
Lard.....	17.00	.20
Codfish.....	10.75	.14
Dried beef (Tasajo).....	14.00	.17
Butter.....	.....	.50
Hay.....	1.50	.....
Oats (American).....	2.00	.....
Oats (Argentine).....	1.80	.....
American corn.....	1.90	.03
Native corn.....	1.85	.03
	Per Case	Per Can
Condensed milk.....	\$4.75	\$0.11
Beef from 15c to 40c, depending upon the cut.		
Eggs average 40c per dozen.		
Hens from 80c to \$1.00 each.		

IMPORTANT CITIES OF CUBA

Following is a list of municipalities in the Republic of Cuba having a population of 10,000 or over:

Havana.....	353,000	Guantanamo.....	45,000
Santiago.....	55,000	Guanabacoa.....	27,000
Matanzas.....	75,000	Sagua la Grande.....	29,000
Cienfuegos.....	75,000	Pinar del Rio.....	53,000
Camaguey.....	68,000	Trinidad.....	31,000
Cardenas.....	30,000	San Antonio delos Banos	22,000
Sancti Spiritus.....	38,000	Jovellanos.....	19,000
Santa Clara.....	48,000	Marianao.....	20,000
Manzanillo.....	56,000		

STEAMSHIP LINES

So rapidly has the shipping increased, particularly into the harbor of Havana, that two additional concrete docks have become necessary for the handling of this commerce. Pier No. 1, 670 feet long; pier No. 2, 620 feet long.

(See Moody's Manual, 1916 [Industrial and Public Utilities Section], page 3304.)

The Peninsular & Occidental S. S. Co. operates daily, except Sunday, service between Key West, Fla., and Havana, Cuba, making the run in from six to seven hours. At Key West connection is made with solid, fast Pullman trains via the "Over-sea Railroad" for all points of the United States.

This company also operates a semi-weekly service between Tampa, Fla., and Havana, making connections with all points north. The same system inaugurated a car-ferry service between Key West, Fla., and Havana in December, 1914, linking up the Florida East Coast R. R. with the United Rys. of Havana, by which the railroads of the Island of Cuba became part and parcel of North-American Continental R. R. System. Freight cars of almost any of the United States and Canadian R. R. companies can constantly be seen on the Cuban roads, the car-ferry making a daily round trip between Key West and Havana with never less than 28 freight cars on board, loaded with merchandise or machinery, direct from the factories to the sugar mills and interior points without rehandling, and carrying north in the same way sugar in bulk, molasses in tanks, tobacco in bales, hard wood, pineapples and other fruit, etc.

A second and larger car-ferry is now under construction and will soon be placed in operation.

The United Fruit Company has established a series of lines, with more boats sailing to and from Havana, than from any other city in the Western hemisphere. At the present time there are weekly sailings over this line from Havana to New York (every Friday), sailing from there on Saturdays, and to Boston (every Wednesday), returning from the latter city on Thursdays.

Other steamers of the same line leave Havana every Saturday for New Orleans, return ships sailing from the latter city on Wednesdays.

A United Fruit Co. steamer leaves Havana every Saturday for Colon, Panama, leaving Colon for Havana each Thursday. Ships of this line also leave Havana each Saturday for Bocas del Toro, via Colon, sailing from the latter city for Havana Saturdays. Ships sail on Thursdays for Puerto Limon, Costa Rica, leaving that port on the return voyage, Sundays.

Another sailing of this line leaves New Orleans Saturday of each week for Cienfuegos, Cuba, thence to the Isle of Pines, leaving the wharf of Los Indios each Monday on return voyage to New Orleans direct.

The Cuba Mail & S.S.Co., known as the "Ward Line," operates two steamers a week between Havana and New York. These boats leave the former city on Wednesday and Saturday, returning from New York Tuesday and Saturday. The Ward Line also operates steamers between Havana and Mexican ports and Santiago de Cuba and New York.

The Southern Pacific S. S. Co. has a weekly

service between New Orleans and Havana, with sailing from the former city on Saturdays, from Havana on Tuesdays. The sailing dates, however, are subject to changes dependent upon the season of the year.

The Munson Line operates steamers every fifteen days from New York to Antilla (Nipe Bay) and Nuevitas. In addition to these passenger steamers this line has about 145 steamers per annum from Cuban points to the States, which carry no passengers.

The United Steamship Company has a steamer leaving Galveston on the 1st, 10th and 20th of each month. These steamers touch at Havana and other Cuban ports.

The Elder Dempster Line has a steamer a month from Canadian ports, Halifax and St. John to Havana.

The Compania Trasatlantica Espanola operates a semi-monthly service between Barcelona, Cadiz, Canary Islands to Porto Rico and Havana, thence to Mexican ports, returning to Havana and to Coruna; one of the steamers making the trip via New York and the other via the Canary Islands.

The Sociedad Anonima de Navegacion Trasatlantica line has a steamer leaving Barcelona, Valencia, Malaga, Cadiz, Canary Islands, Porto Rico, Havana, thence to Guantanamo, Manzanillo, Cienfuegos and Cardenas, thence to New Orleans and returning via Havana.

The Compagnie Transatlantique (French Line) previous to the outbreak of the war had a steamer every month from St. Nazaire, Spanish north coast ports, Havana and Vera Cruz, Mexico,

returning to Havana and the same European ports. Since the beginning of the war, the service has been greatly increased, there often being three or four steamers of this line per month.

The Norway-Mexican Gulf Line has a steamer a month leaving Christiania about the 20th for Hampton Roads, Havana, Mexican ports, Galveston and New Orleans.

The Holland-American Line, also has steamers plying between various ports of the Netherlands and Havana.

The Hamburg-American and North German Lloyd Lines played a very important part in carrying both passengers and freight between Cuba and various sections of the world, until the European war compelled an absolute suspension of all traffic under the German flag.

In addition to the above mentioned passenger lines, there are many steamship lines plying between Havana and various foreign ports, which carry freight only. The itinerant, or so-called tramp steamers, are entering and leaving the harbor of Havana almost every day of the year.

COASTWISE STEAMERS

The Herrera Line operates coastwise steamers, which make the trip to the principal points in Santa Domingo and Porto Rico every three weeks. The steamers likewise make trips to Santiago de Cuba and intermediate points, leaving each Saturday and Wednesday. The North Coast or Vuelta Abajo Line runs a steamer the 7th, 15th, 22nd and 30th of each month from Havana along the north coast, west to La Fe. The Trujillo Line has a steamer leaving Batabano, on the south coast, every Wednesday and Thursday for Santiago, also one leaving Saturday night for Manzanillo and intermediate points. Another steamer of the same line leaves Batabano every Sunday for Jucaro and intermediate points. All these lines have recently been amalgamated into one corporation called the "Empresa Naviera de Cuba."

CUBAN RAILROADS

Cuba was the second country in America to operate a steam railroad. This road was constructed under the direction of the Improvement Board of Havana and opened for traffic on the 19th of November, 1837. It connected the capital with the town of Guines and was about forty-five miles long.

From this small nucleus has developed a railroad mileage in Cuba aggregating 2,775 miles, which compares favorably with the railroad mileage of any state in America.

Today there are four great railway systems in Cuba, extending from one extremity of the Island to the other. There is an excellent daily train service on the trunk lines and the minor systems, principally used for the transportation of agricultural products, have been developed to a high degree of efficiency.

The four great railway systems of Cuba are:

United Railways of Havana,
The Cuba Railroad,
The Cuban Central Railroad,
The Western Railway of Havana.

A reference to the map accompanying this book will illustrate the railway situation more completely than could a verbal explanation.

The seventeen principal railroads of Cuba, with the mileage of each and the business done by them, appear in the following table:

Railroads	Mileage	Year Ending June 30, 1914	
		Tons	Passengers
United Railways of Havana.....	855.08	6,253,337	1,780,109
The Cuba Railroad.....	683.20	2,402,461	1,311,973
The Cuban Central.....	441.62	2,946,409	989,020
The Western Railway.....	163.71	583,904	585,962
Guantanamo and Western Railroad..	97.85	377,328	183,888
Havana Central (Electric).....	97.16	695,036	3,088,435
Camaguey and Nuevitas.....	50.47	130,095	72,429
Gibara and Holguin.....	74.88	9,655	66,715
Jucaro and Moron.....	48.12	437,384	253,954
Juragua.....	36.68	80,310	19,909
Central Caracas.....	46.49	217,382	59,273
Guantanamo Railroad.....	43.75	358,585	131,152
Tunas and Sancti Spiritus.....	24.37	7,345	18,781
Rodas and Cartagena.....	14.06	19,412	19,558
North American Sugar Co.....	38.75	.....	.....
Yaguajay Railroad Co.....	15.00	.....	.....
Insular Railway Co. (Electric).....	10.85	2,255	1,704,150
Matanzas Terminal R. R. Co.....	8.26	587,023	3,988
Havana Terminal Ry. Co.....	17.29	.....	.....
Cienfuegos, Palmira & Cruces.....	6.25	.....	805,507

THE ELECTRIC LINES OF CUBA

(See Moody's Manual, 1916 [Industrial], page 1668, page 1769, page 1045.)

The cities of Havana, Santiago, Camaguey, Cienfuegos, Cardenas, Matanzas, Santa Clara, Pinar del Rio have well equipped and modern electric plants to supply electricity for both light and power.

Electricity being so closely associated with urban transportation, it necessarily holds that we combine in this work the information on electric railways and the power produced by the various units.

The following table gives the information in detail:

Cities	Miles		Value of Equipment	Passengers Hauled 1915
	Electric H. P.	Electric Roads		
Havana.....	60,000	86.35	\$53,192,191	54,304,079
Santiago.....	3,870	12.70	4,291,446	4,475,598
Camaguey.....	1,495	4.15	1,256,507	1,851,863

There are 80 cities in Cuba, well equipped with electric plants sufficient to their needs.

THE CUBAN TELEPHONE SYSTEM

The systems of telephone, both local and long distance, in the Republic of Cuba, are most extensive.

Practically every town of consequence, every sugar central, and most of the small villages are connected under one system.

The Cuban Telephone Co. operates exclusively throughout the Island and a general appreciation of the extent of operations may be gained from the following table:

About 1,600 miles long distance pole lines; 67,062½ miles of wire strung. 93,850 native hardwood poles.

34 exchanges, of which 8 are automatic.

220 cities and towns and 60 sugar mills connected by long distance, each city or town having its long distance station.

21,999 instruments in use.

Gross income, year ending Dec. 31, 1915, \$1,254,069.16. (Month July, 1916, \$132,113.35).

Number of phones in operation end of 1915, 19,876.

Preferred capital stock, \$2,000,000.00; common capital stock, \$5,000,000.00. Surplus, 1915, \$895,649.42.

Number of employes, 749.

THE MANUFACTURED PRODUCTS OF CUBA

In the following tables are shown condensed statistics, ranging over a period of three years, which will serve as a guide to those seeking information on these subjects:

	1914 (Tons, 2,240 lbs.)	1915	1916 (Estimated)
SUGAR			
Quantity manufactured..	2,596,567	2,582,845	3,050,000
Home consumption.....	16,335	19,787	25,000
Export.....	2,580,232	2,563,058	3,025,000
Import (Refined).....	1,313	330	500
Number of plants.....	173	176	188
Value of output.....			\$200,000,000
CIGARS			
Export.....	132,104,088	121,169,547	.....
Number of factories.....	93	81	73
Operatives employed....	31,000	27,500	20,000
CHOCOLATE AND CACAO			
Export.....	*68,540	*45,996	.....
Import.....	*398,115	*429,709	.....
Number of plants.....	24	26	26
SISAL			
Export.....	*749,471	*444,592	.....
Import.....	*275,746	*588,934	.....
Number of plants.....	3	3	3
Operatives employed....	2,500	2,500	2,500
BANANAS			
Export.....	†55,761,013	†48,396,679	.....
PINEAPPLES			
Export.....	†32,557,900	†33,006,816	.....
FOODSTUFFS			
Import (value in dollars). \$	46,867,795	53,930,497	.....
WEARING APPAREL AND DRY GOODS			
Import (value in dollars). \$	16,030,398	19,214,461	.....
Tailors and dressmakers.	473	528	.....
Operatives employed.....	6,321	7,108	.....
†Indicates kilo. *Indicates lbs.			

	1914	1915	1916
HIDES			
Export (Raw).....	*14,258,432	*16,310,654	.....
Import (Tanned).....	*1,231,780	*1,406,854	.....
Tanneries.....	41	43	.....
LEATHER			
Import (Pairs of shoes) ..	4,091,284	4,827,335	.....
Harness & Belting.....	*530,112	*772,566	.....
Number of plants (Shoes)	28	37	.....
Operatives employed....	583	714	.....
Shoemakers.....	6,848	7,171	.....
FISHERIES			
Export (Turtles, live)....	*50,106	*7,434	.....
Import (Fresh Fish).....	*1,297,121	*2,445,659	.....
Dried and Canned....	*33,633,500	*38,265,668	.....
SPONGE INDUSTRY			
Export.....	*236,620	*231,254	.....
†Indicates kilo.	*Indicates lbs.		

THE MINERAL WEALTH OF CUBA

The Spanish conquerors of the 16th century, who forced their way into the wilderness of the Western Hemisphere, devoted little thought or efforts to the agricultural opportunities offered in the new world. Mineral wealth, that which lay beneath the rich surface soil alone appealed to them. To find great heaps of gold seemed to be the main object of their ambitions.

The aborigines of Cuba, the Siboneys, wore gold ornaments in profusion and exhibited small nuggets, but the source of these was never revealed to the Spaniards. The mountains of Cuba are covered by forests of hardwoods, below which lies a comparatively deep carpet of Humus and rich soil. The early prospectors for gold and other mineral wealth found the discovery of minerals most difficult on this account.

Opportunities for the raising of live stock seemed more profitable than the prospecting for minerals.

Copper was found in a few isolated places, principally west of Santiago de Cuba, and many years later stray outcroppings of the same ore were encountered in the mountains of Santa Clara and Pinar del Rio, but it was difficult to locate the main lodes, and since the Siboneys preferred death to laboring in the mines, they lent practically no aid in the discovery of these metals. It was the middle of the 16th century before the aborigines succumbed to their conquerors and not until the early part of the 19th century was the presence of immense deposits of iron ore found throughout the mountain districts of Oriente.

IRON DEPOSITS OF CUBA

Nearly all the great iron deposits of Oriente lie within a few feet of the surface, and on the southern slope of Sierra Maestra. In many places it is only necessary to scrape the dirt from the sides of the hills, remove the ore at small cost and send it down to the sea by gravity. The same is true of the Mayari mines on the north coast, just back of Nipe Bay, where the deposits need nothing but washing with cold water. The economy of handling these ores has appealed to large capital in the United States.

Daiquiri and Juragun are being worked in the open but need quite some quarrying to get out large quantities of ore.

Regardless of the fact that these iron ores were found to be equal to those of Sweden, and superior, in that nature has supplied the requisite amount of both nickel and manganese, thus making the mines of Oriente perhaps the most valuable in the world, little attention has been paid to these marvelously rich sources of mineral beyond those few who are drawing dividends from the industry.

The recent purchase of the Spanish American Iron Company's holdings at Daiquiri for \$32,000,000.00 has called the attention of the mining interests in New York to the fact that millions of tons of untouched ore are still available in Cuba.

Twenty-five per cent of the area of Oriente still contains vast deposits of high grade iron and manganese and capital will be quick to see this advantage.

PRESENT IRON MINING STATUS

Number of active mines.....	5
Gross output of ore.....	969,612 tons
Average per cent fineness.....	35%
Operatives employed.....	17,018
Exports during 1915.....	762,844 tons

COPPER DEPOSITS OF CUBA

As a result of the present large demand for copper and the consequent high prices offered for this metal, great activity has been revived in the industry of copper mining.

Many of the old mines of Pinar del Rio, abandoned by reason of lack of transportation facilities, are now being opened up and producing successful outputs.

In 1915 former Secretary of Public Works, Senor Luciano Diaz, started the development of his "Mata Hambre" mine, on the north coast of Pinar del Rio. This ore runs from twelve to twenty-four per cent copper with a sufficient amount of silver in combination to pay the entire smelting cost.

At the present time ore is being taken out at the rate of over 2,000 tons per month, and \$10,000,000.00 cash have been refused for the holdings.

Since the successful operation of the "Mata Hambre" mine has been established, many claims have been staked out in that part of the province, some of which will no doubt prove valuable.

Systematic and intelligent investigation of this section is sure to yield high returns to those who will take on the work.

Some of the most promising finds have been located some miles back of the deep water harbor of Bahia Honda, sixty miles west of the city of Havana. One of these, known as "El Brujo," still bears the hardwood roof supports placed by prospectors of more than a half a century past.

This mine has been leased to a Havana company and is being profitably worked, although on a small scale. The ore yields from twenty-two to twenty-six per cent copper to the ton.

The greatest activity in copper mining has been manifested in the province of Pinar del Rio and the copper field apparently ceases in the eastern trend of the mountains, to reappear in the peaks near Trinidad, in the province of Santa Clara. Rich finds have been recently made, but are being worked only on a small scale.

In Oriente there is a great unexplored region that will some day make Cuba famous for her mineral wealth.

PRESENT COPPER MINING STATUS

Number of active mines.....	42
Gross output of ore.....	65,000 tons in 1915
Average per cent fineness.....	15%
Operatives employed.....	About 5,000
Exports during 1915.....	64,532 tons

This section is extremely rich in copper, nickel, manganese, lead, silver, and occasionally, gold.

In the Sierra de Cubitas mountains, paralleling for fifty miles the north coast of Camaguey, iron, copper, manganese, chrome and other minerals are found, but with the exception of such development as has taken place in working the iron holdings, no serious effort is being made to investigate or develop the other mining opportunities of this field.

The building of the north shore railroad, a spur of which will be sent into the iron deposit section, will have a tendency to develop the metal industry.

THE ASPHALTUM DEPOSITS OF CUBA

Santa Clara province has a number of asphalt deposits, most of which are located near the north coast.

Matanzas province on the north coast appears to be underlaid with asphalt in paying quantities. It is found in the deep water of the Bay of Cardenas, where vessels have been known to anchor over the deposits and load with over 300 tons in a fortnight, in fact the bay seems to be over a large bed of asphalt. The product that seems to attract most attention, and astonishes even mineralogists, is that furnished by the San Juan mines in the Motembo hills. By some it is called "Mother of Oil," by others it is given the name of naphtha. The product is as clear as spring water. If a little is poured on a marble slab it burns when ignited in a clear flame until the slab is dry, leaving absolutely no residue and making no smoke. It has the odor of naphtha, and possesses all the characteristics of that liquid. These wells are located near the western line of Santa Clara. Petroleum is found in Matanzas province, and many wells have been drilled, but none of them thoroughly developed.

In Havana province traces of petroleum have been found, but in no such quantities as in Matanzas. Asphalt also is found throughout the central and northern part. The product is of a high grade, much of it yielding 70 per cent bitumen. None of the deposits, however, have been thoroughly developed, though there are 130 "denouncements" registered with the Government.

While the production has remained on about the same scale for the last ten years, averaging

about 8,000 tons per annum, the home consumption has increased heavily, as can be seen from the exports during the last four years:

1912, 9,389 tons, \$60,924; 1913, 806 tons, \$15,642; 1914, 879 tons, \$19,491; 1915, 442 tons, \$11,247.

Recently some development work, with very promising results, has been made near Mariel, on the north coast of Pinar del Rio, and near Jatibonica, on the border of Santa Clara and Camaguey provinces.

The Republic of Cuba needs a geological survey that would render searching for minerals less sporadic than it is at the present time.

THE MINING LAWS OF CUBA

Instead of "staking a claim" to a mining property in Cuba it is "denounced." In other words, a prospector makes a drawing in duplicate, in which he starts from a given center and goes so many meters east, so many south, west and north, until he completes either a square, parallelogram, or rectangular figure, after which an estimate is made of the number of hectares included in said drawing (a hectare being equivalent to about two and one-half acres of land).

With his drawing, and a sufficient amount of cash to pay \$2.00 for each hectare, he presents himself at the office of the Provincial Government corresponding to the province where the mine is located, and there registers his claim, pays his money and gets a receipt, signed and sealed by the Government, with the date, and even the hour, attached. This claim or "denouncement" once registered, he is entitled to everything that lies below what is termed the agricultural surface of the ground for all time to come.

If the owner of said property protests against the miner digging or boring for copper, asphalt, oil, or any other product lying beneath the surface, the claimant to the mineral rights must adjust his claim amicably with the owner of the property, lease it or work it, paying to said owner damages or a price that, if not mutually agreed on, is determined by a board of appraisers. In the meantime the mine can be developed, subject to a bond being given until a settlement with the owner of the property is made.

The usual custom, however, is to arrange with

the owner, whenever possible, to accept a small royalty on whatever ore or oil may be removed from below the surface, this agreement being acknowledged before a notary public and registered in the nearest municipality. These rules and regulations in Cuba have proved eminently satisfactory in mining operations and are intended to be fair to all parties concerned.

We will be pleased to supply detailed information concerning any specific industry in Cuba. Our connections are such that we can obtain facts that might otherwise prove hard to procure.

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